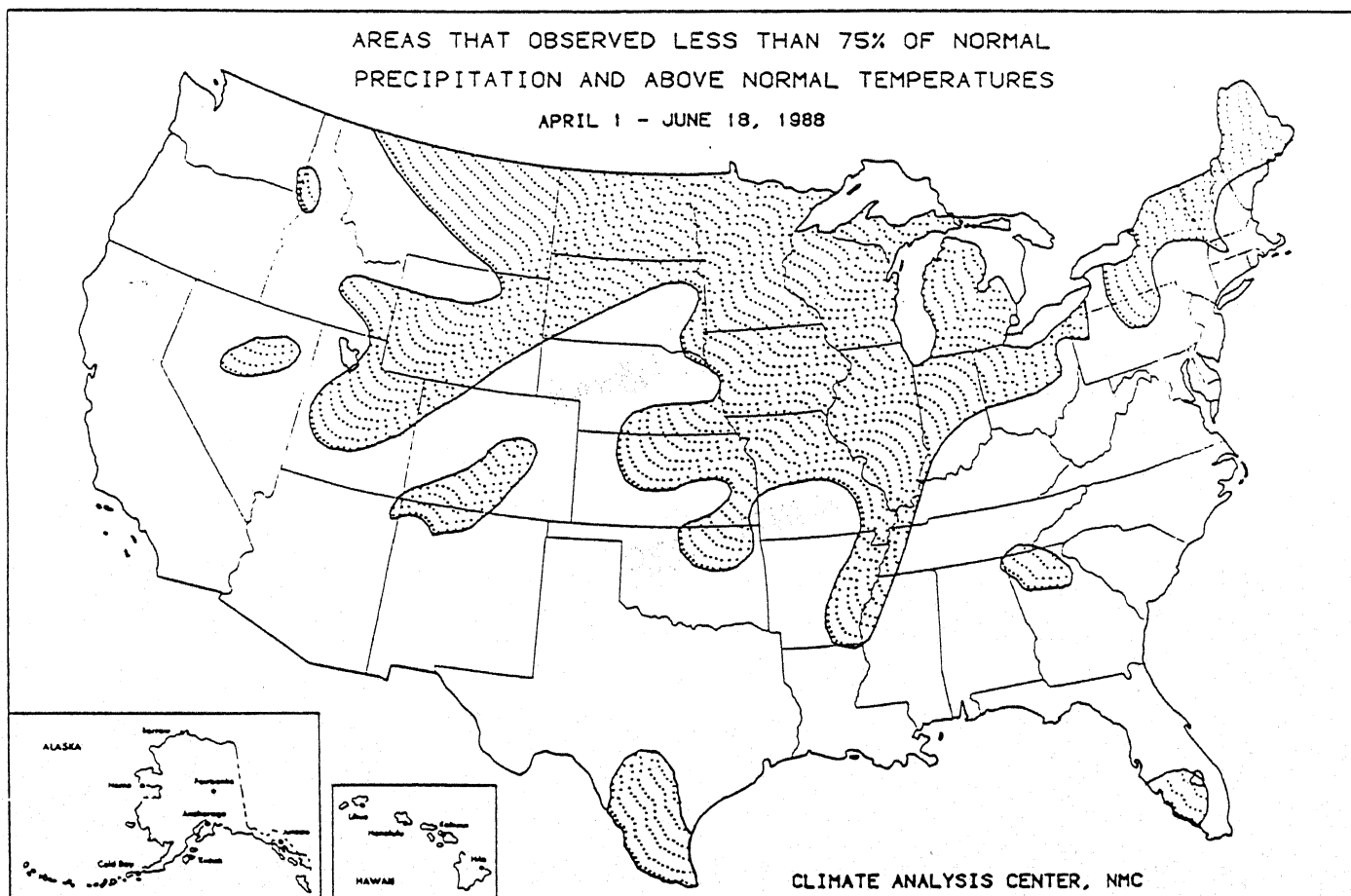


# WEEKLY CLIMATE BULLETIN

No. 88/25

Washington, DC

June 18, 1988



SINCE THE START OF APRIL, MUCH OF THE NORTHERN AND CENTRAL U.S. HAS EXPERIENCED UNUSUALLY DRY AND WARM CONDITIONS. FOR ADDITIONAL INFORMATION ON THE NATION'S PRECIPITATION AND TEMPERATURE ANOMALIES, REFER TO THE SPECIAL CLIMATE SUMMARY.

NOAA - NATIONAL WEATHER SERVICE - NATIONAL METEOROLOGICAL CENTER

## WEEKLY CLIMATE BULLETIN

Editor: David Miskus  
Associate Editor: Paul Sabol  
Contributors: Keith W. Johnson  
Vernon L. Patterson  
Graphics: Robert H. Churchill  
Robert P. Nester  
Richard J. Tinker

This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- Highlights of major global climatic events and anomalies.
- U.S. climatic conditions for the previous week.
- U.S. apparent temperatures (summer) or wind chill (winter).
- Global two-week temperature anomalies.
- Global four-week precipitation anomalies.
- Global monthly temperature and precipitation anomalies.
- Global three-month precipitation anomalies (once a month).
- Global twelve-month precipitation anomalies (every 3 months).
- Global temperature anomalies for winter and summer seasons.
- Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

To receive copies of the Bulletin or change mailing address, write to:

Climate Analysis Center, W/NMC53  
Attention: Weekly Climate Bulletin  
NOAA, National Weather Service  
Washington, DC 20233  
Phone: (301)-763-8071

# GLOBAL HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF JUNE 18, 1988  
(Approximate duration of anomalies is in brackets.)

## 1. United States and Adjacent Southern Canada:

WARM, DRY CONDITIONS PERSIST.

Little or no precipitation fell across much of the central and eastern United States; however, moderate to heavy precipitation, up to 52 mm (2.05 inches), fell in parts of northeastern Montana, northern North Dakota, and northern Minnesota. Unusually warm conditions persisted in the north central states with temperatures as much as 4.1°C (7.4°F) above normal. See Special Climate Summary and U.S. Weekly Weather Highlights for additional details [14 weeks dry - 7 weeks warm].

## 2. South America:

AREA REMAINS COLD.

Temperatures were as much as 4.7°C (8.5°F) below normal across much of Bolivia, Paraguay, western Uruguay, and northeastern Argentina [5 weeks].

## 3. Kazakh S.S.R.:

VERY WARM CONDITIONS PREVAIL.

Unusually high temperatures occurred across much of the Kazakh S.S.R. and adjacent Soviet Socialist Republics and were as much as 7.7°C (13.9°F) above normal [5 weeks].

## 4. Central India:

RAINS BRING RELIEF TO SOME AREAS.

Very heavy rains, up to 370.1 mm (14.57 inches), ended dryness in parts of east central India; however, little or no precipitation was reported in parts of central and west central India [5 weeks].

## 5. Turkey:

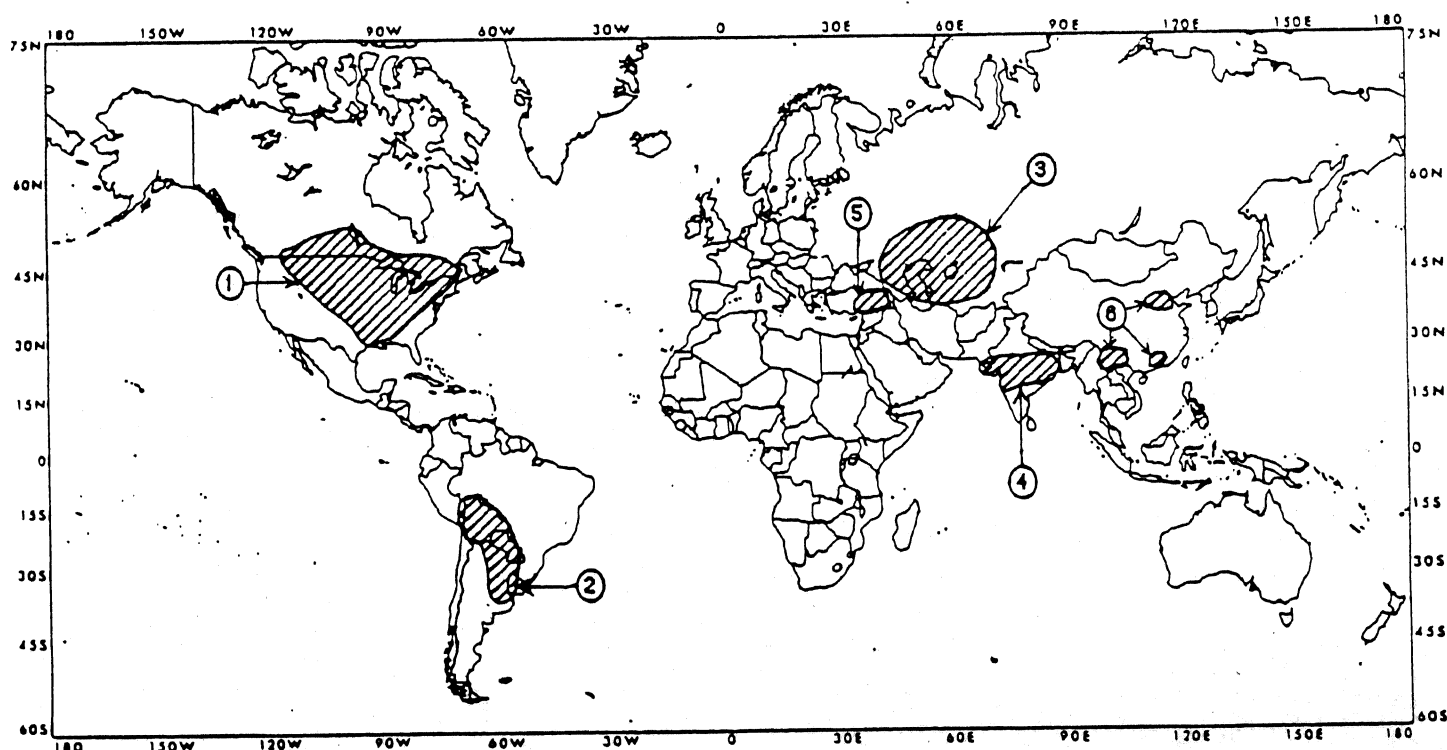
HEAVY RAINS OCCUR.

Heavy precipitation, as much as 45.5 mm (1.79 inches) at Irbilgt AFB, fell in eastern Turkey. According to press reports, the storms caused severe flooding near the capital city of Ankara [Episodal Event].

## 6. China:

DRY CONDITIONS DEVELOP.

Little or no precipitation fell in east central China and in southeastern China as unusually dry weather prevailed. Light precipitation, generally less than 19.1 mm (0.75 inches), was reported in south central China [4 weeks].



Approximate locations of the major anomalies and events described above are shown on this map. See the other world maps in this Bulletin for current two-week temperature anomalies, four-week precipitation anomalies, and (occasionally) longer-term anomalies.

# U.S. WEEKLY WEATHER HIGHLIGHTS

FOR THE WEEK OF JUNE 12 THROUGH JUNE 18, 1988

Widely scattered thunderstorms brought badly needed rainfall to portions of the drought-stricken northern Great Plains and Southeast. According to the River Forecast Center data, weekly maximum totals were located in central Nebraska (2.2 in), western Missouri (2.2 in), southern North Dakota (2.5 in), central South Dakota (2.5 in), central and northern Georgia (2.6 in), western South Carolina (2.6 in), and western and eastern North Carolina (2.8 in). Elsewhere, heavy precipitation fell for the fifth consecutive week in southeastern Florida as up to 7.0 inches was measured south of Miami, while the panhandle of Texas and eastern New Mexico recorded between two and three inches of rain (see Table 1). Light to moderate amounts were reported in southeastern Alaska, along the coast of Washington, in the northern Rockies, central and northern Great Plains, upper Midwest, northern New England, southern Florida, and in parts of the Ohio Valley, central Appalachians, and western Carolinas. Little or no precipitation occurred in the Southwest, Pacific Northwest interior, and southern half of the Rockies, from central Texas and Oklahoma eastward through the South to the Carolina coast, in most of the Midwest, and in parts of the mid-Atlantic and New England regions. The continued lack of significant rain in the eastern two-thirds of the U.S. since April 1 has produced large precipitation deficiencies. For

further details, refer to the Special Climate Summary.

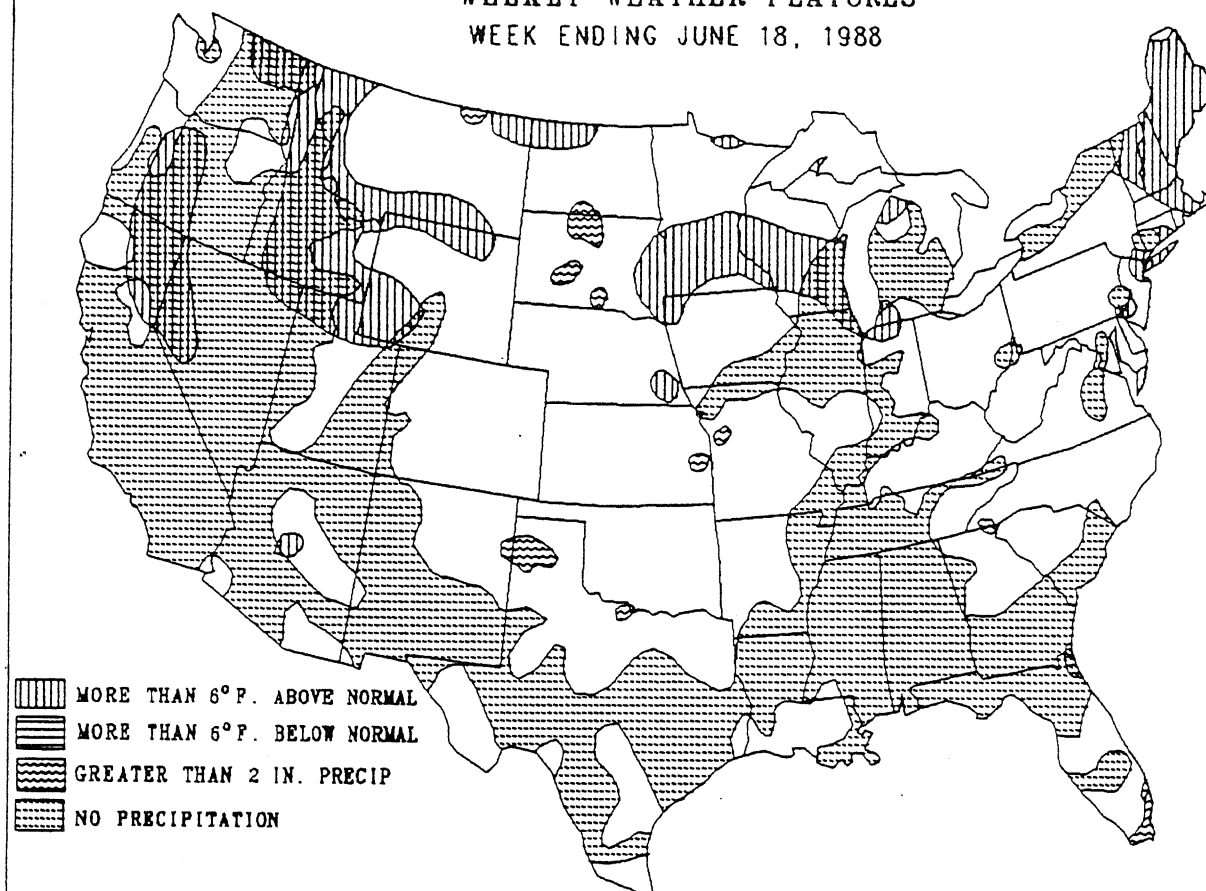
Temperatures during the last full week of Spring, 1988 were more characteristic of late summer as readings in the nineties and one hundreds were common across much of the nation while the heat further aggravated the abnormally dry conditions in the Great Plains and Midwest. The western, northern, and eastern parts of the U.S. experienced above normal temperatures with the largest departures (between +7 to +10°F) located in the Pacific Northwest interior, upper Midwest, and northern New England (see Table 2). Several cities established daily record high temperatures during the first half of the week in the northern Great Plains and upper Midwest and along the Atlantic Coast. In contrast, cooler conditions settled into the southern U.S. and southwestern California. Several locations in the Southeast set daily record low temperatures early in the week in association with a high pressure center from Canada that brought unseasonably cool weather to the area. Departures of -3 to -6°F were observed from eastern Texas to northern Florida and into South Carolina, in eastern New Mexico and northern Texas, and along California's southern coast (see Table 3). Alaska's temperatures averaged slightly above normal, while Hawaii recorded seasonable readings.

TABLE 1. Selected stations with more than one and a half inches of precipitation for the week.

Miami, FL	4.80	Cape Canaveral, FL	1.89
Annette Island, AK	2.86	Key West NAS, FL (NQX)	1.89
Amarillo, TX	2.67	Greenville, SC	1.76
Yakutat, AK	2.52	Roanoke, VA	1.70
Tucumcari, NM	2.29	McGrath, AK	1.69
Key West, FL (EYW)	2.19	Pierre, SD	1.65
Ketchikan, AK	2.13	Augusta, ME	1.63
International Falls, MN	2.05	Duluth, MN	1.61
Altoona, PA	1.91	Joplin, MO	1.53

# WEEKLY WEATHER FEATURES

## WEEK ENDING JUNE 18, 1988



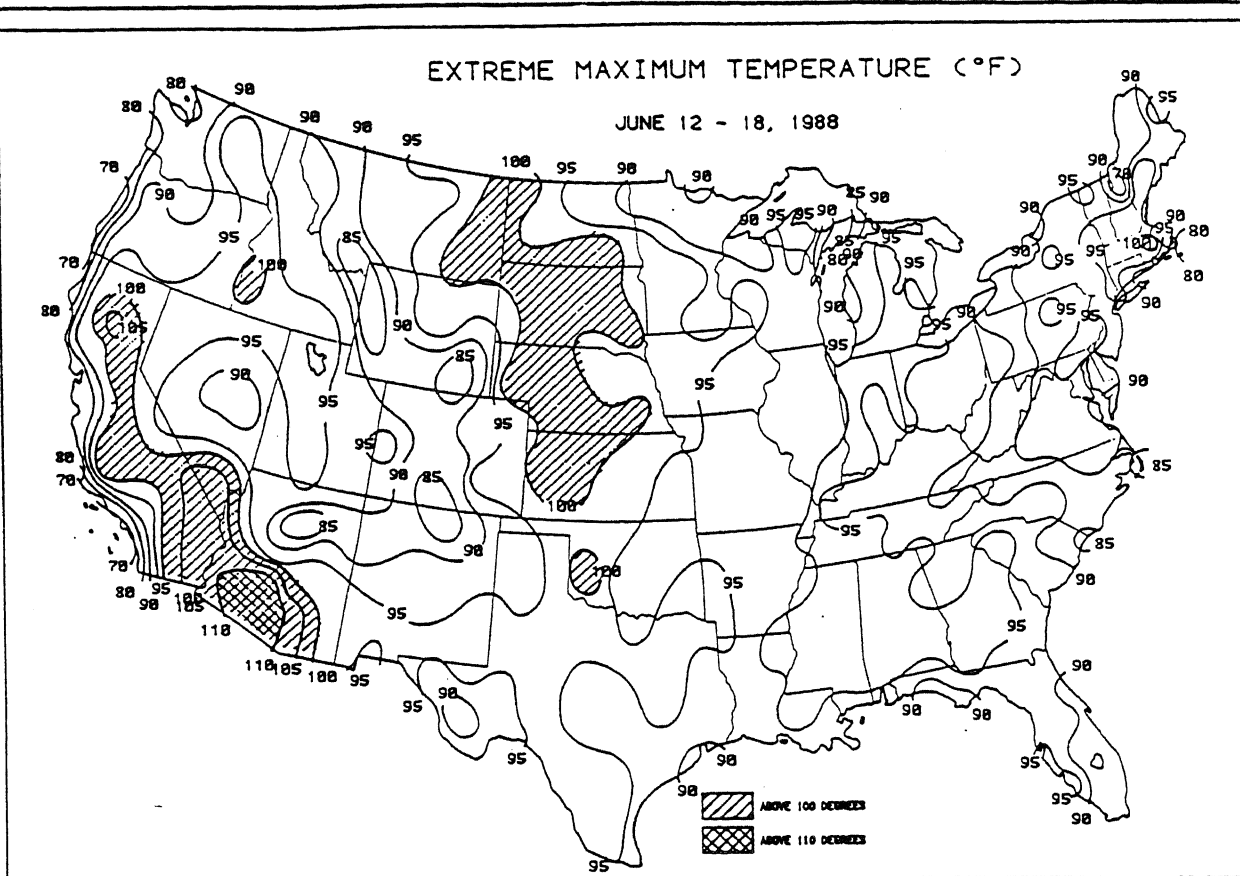
NOTE: The Average Daily Maximum Temperature 80°F isotherm has been removed from the Weekly Weather Features map. A complete Average Daily Maximum Temperature chart has been added on page 4.

TABLE 2. Selected stations with temperatures averaging greater than 6°F ABOVE normal for the week.

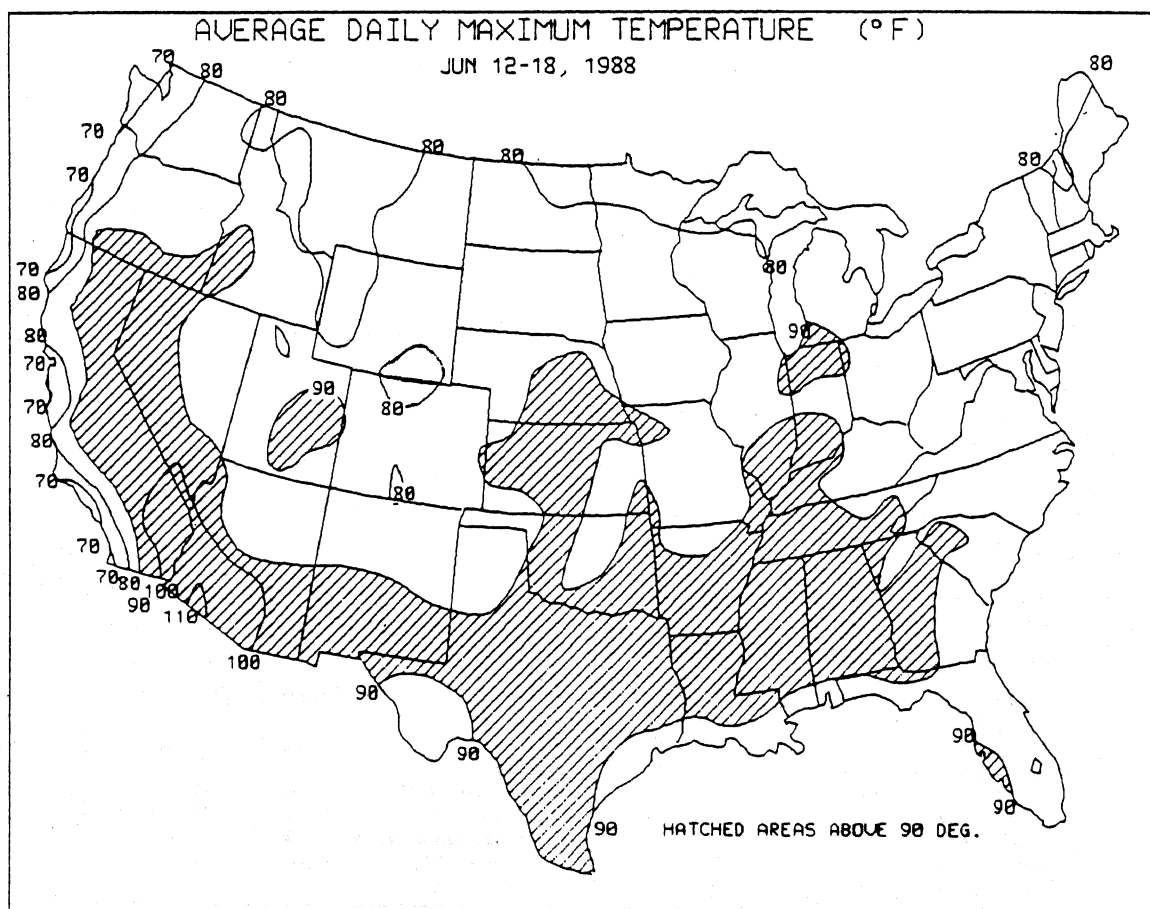
Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Nome, AK	+10	56	South Bend, IN	+ 7	76
Boston, MA	+10	78	Hancock, MI	+ 7	66
Portland, ME	+ 9	72	Lincoln, NE	+ 7	79
Augusta, ME	+ 9	73	Concord, NH	+ 7	72
Worcester, MA	+ 9	74	Mt. Washington, NH	+ 7	52
Newark, NJ	+ 9	81	Providence, RI	+ 7	74
Bangor, ME	+ 8	71	Barre/Montpelier, VT	+ 7	70
New York/La Guardia, NY	+ 8	80	Omak, WA	+ 7	72
La Crosse, WI	+ 8	76	Wausau, WI	+ 7	72
Houlton, ME	+ 8	69	Unalakleet, AK	+ 7	56
Rumford, ME	+ 8	71	Burley, ID	+ 7	70
Reno, NV	+ 8	70	St. Cloud, MN	+ 7	73
Lebanon, NH	+ 8	72	Redmond, OR	+ 7	66
Burlington, VT	+ 8	73	Sioux Falls, SD	+ 7	75
Milwaukee, WI	+ 8	73	Eau Claire, WI	+ 7	74
Boise, ID	+ 7	73			

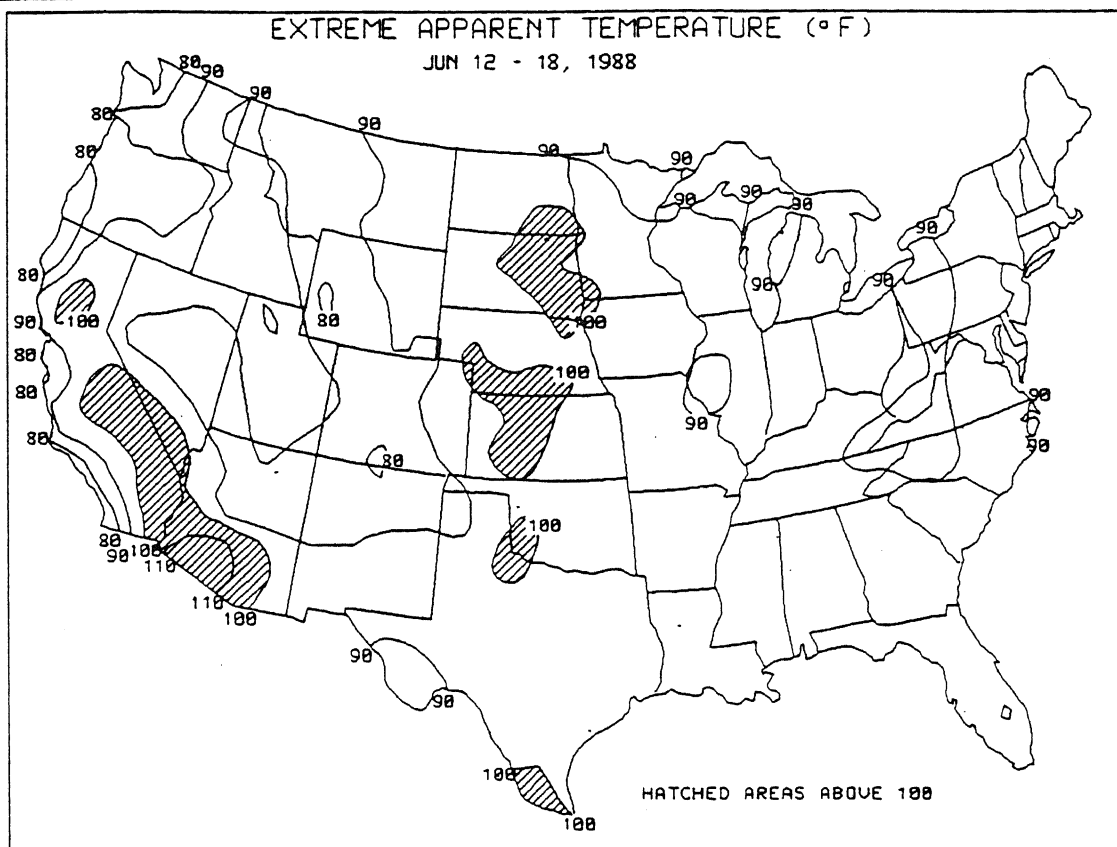
TABLE 3. Selected stations with temperatures averaging greater than 3°F BELOW normal for the week.

Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Apalachicola, FL	-5	76	Wilmington, NC	-4	73
Tallahassee, FL	-5	75	Gainesville, FL	-4	76
Macon/Robins AFB, GA (WRB)	-5	75	Augusta, GA	-4	74
Sumter/Shaw AFB, SC	-5	73	Macon, GA (MCN)	-4	75
Jacksonville, FL	-5	75	Savannah, GA	-4	74
Los Angeles, CA	-4	61	Seymour/Johnson, NC	-4	74
Brunswick, GA	-4	75	Florence, SC	-4	74
Tucumcari, NM	-4	73	Dalhart, TX	-4	70

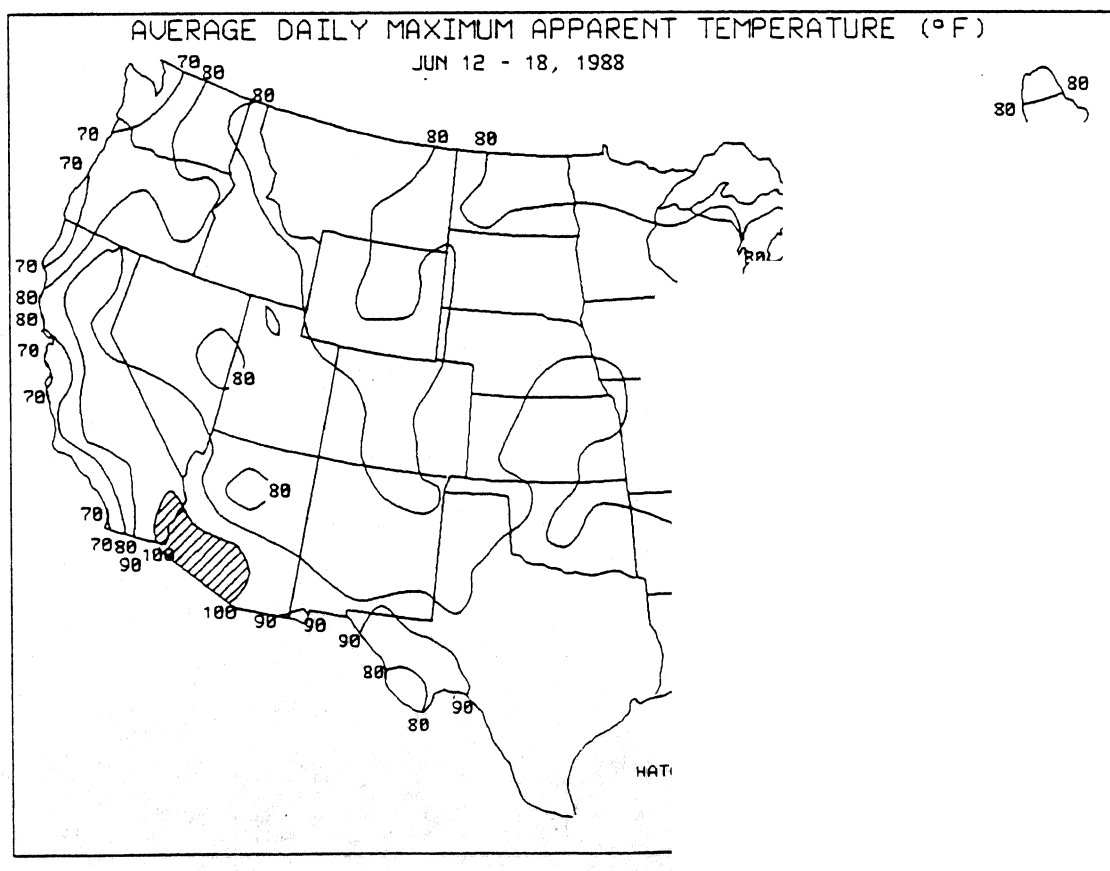


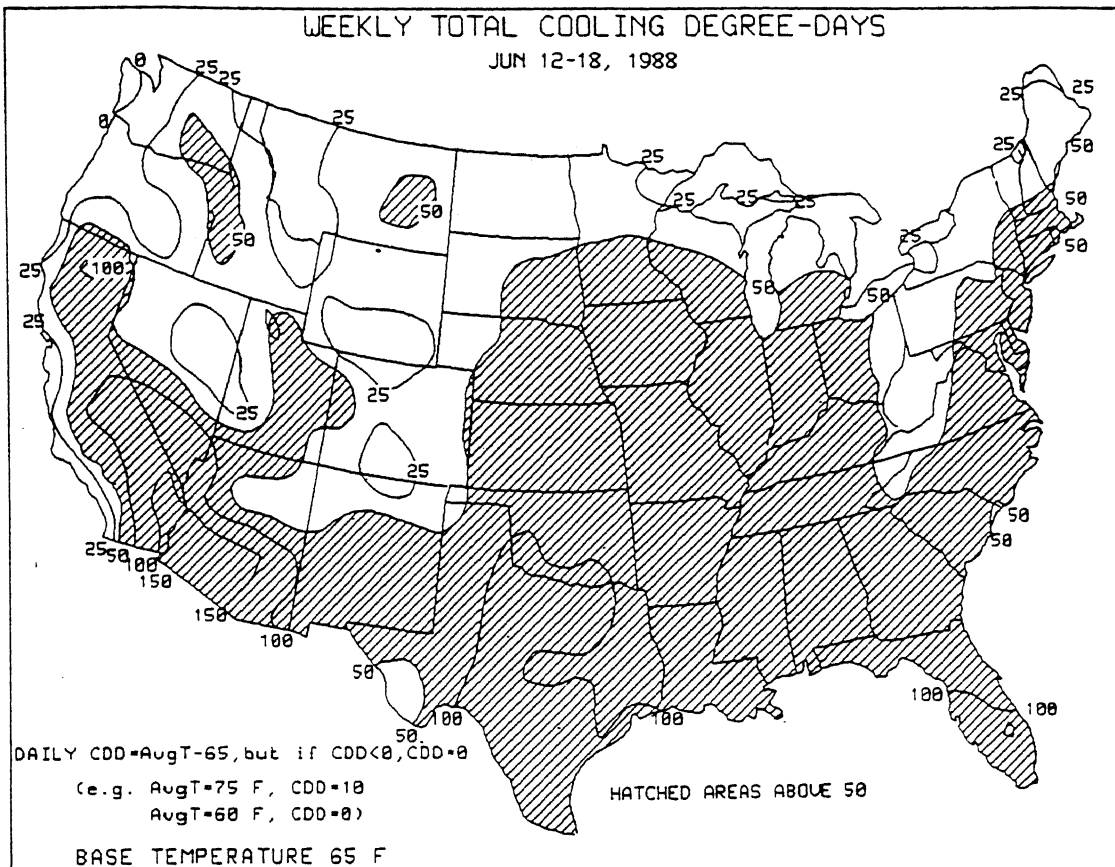
Late summer-like temperatures covered the northern Great Plains, Midwest, and New England as extreme maximum readings were near 100°F. Daily high temperatures averaged over 90°F in parts of the Midwest which further exacerbated the area's abnormally dry conditions.



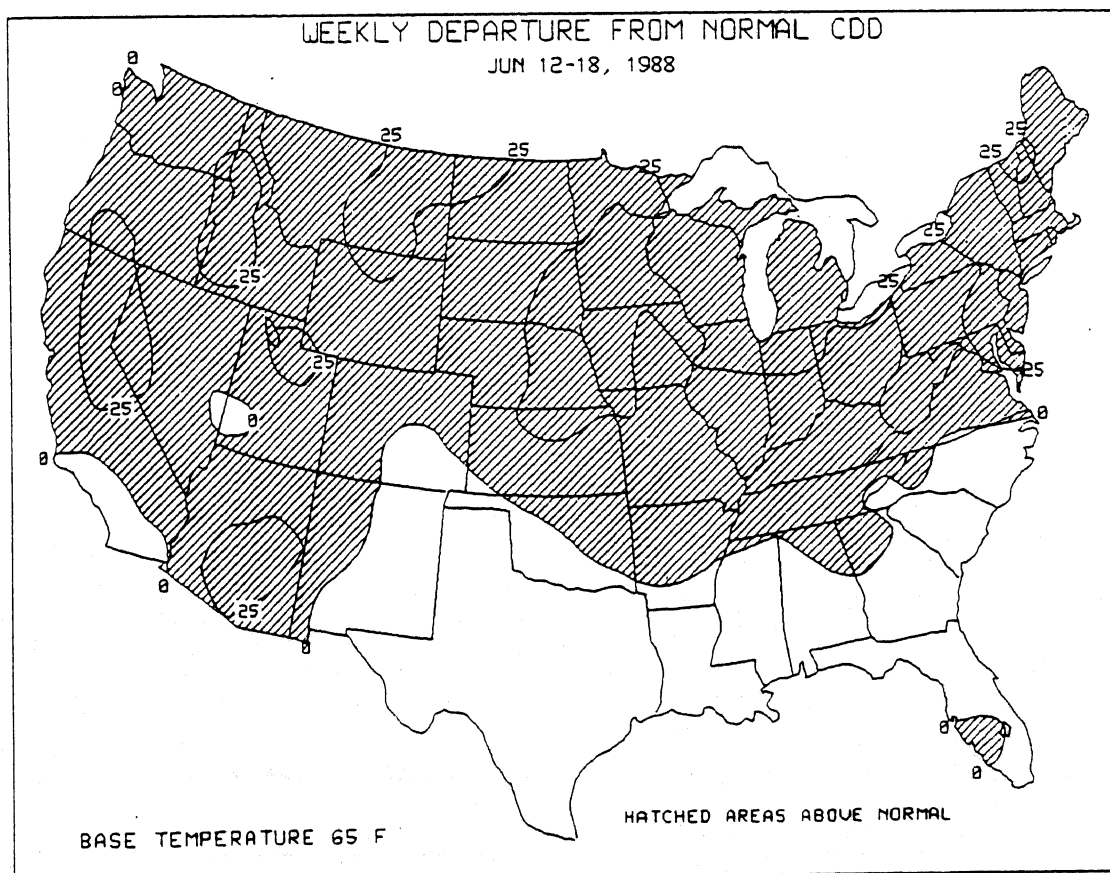


Extreme apparent temperatures surpassed 100°F in the Great Plains and central California, while the daily maximum apparent temperatures averaged over 90°F across the southern U.S. and central Great Plains.



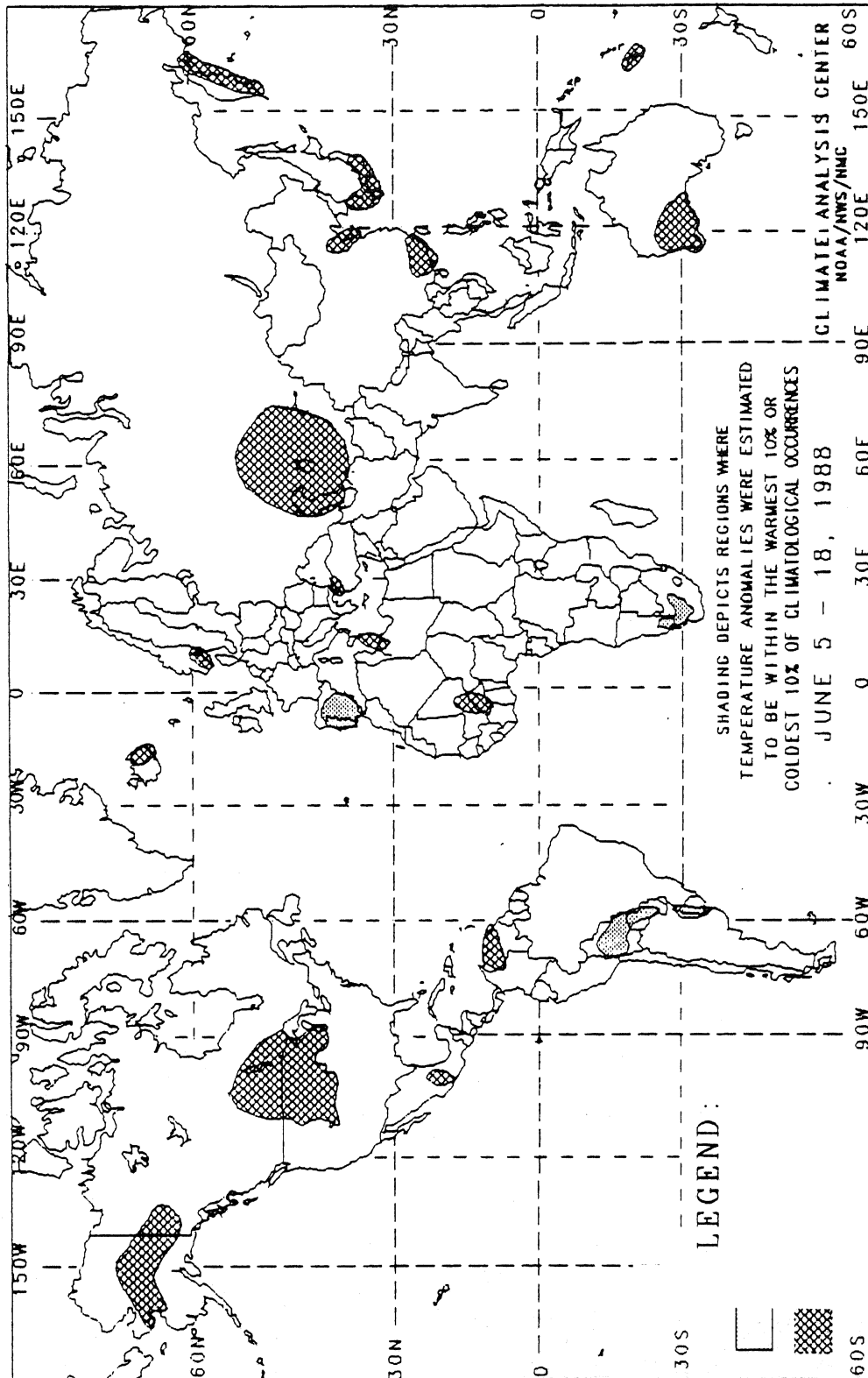


Unusually warm weather increased the cooling degree day (CDD) demand in the western and northern U.S. as weekly totals exceeded 100 CDD in the desert Southwest, central Texas, and southern Florida.



# GLOBAL TEMPERATURE ANOMALIES

2 Week



The anomalies are based on approximately 2500 least 13 days of temperature reports. Many stations do not have night time observations so many night time observations are missing observations the estimated minimum temperature in bias. This in turn may have resulted in an

Temperature temperature def

are based on approximately 2500 least 13 days of temperature reports. Many stations do not have night time observations so many night time observations are missing observations the estimated minimum temperature in bias. This in turn may have resulted in an

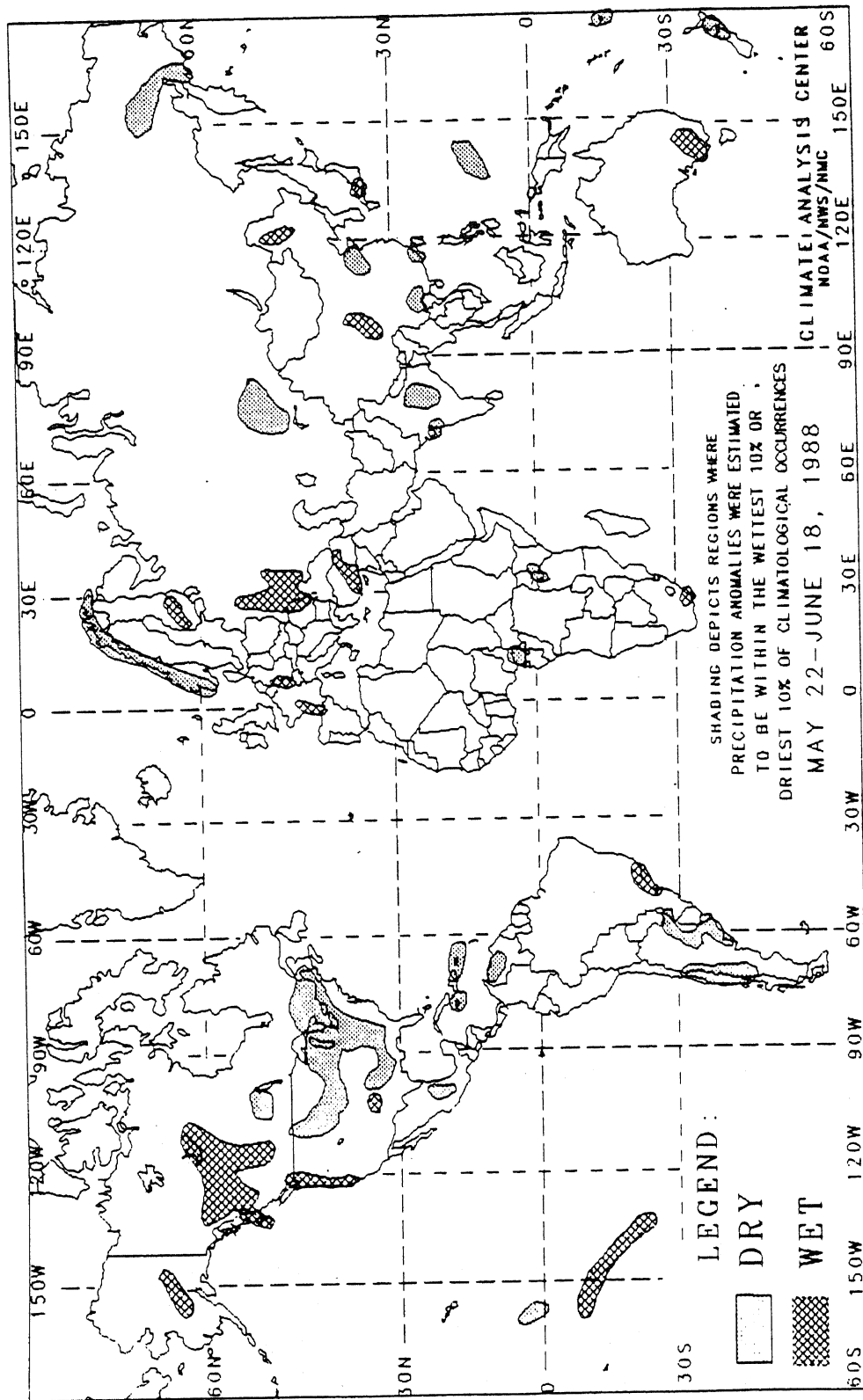
depicted unless the magnitude of exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

# GLOBAL PRECIPITATION ANOMALIES

4 Week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

# SPECIAL CLIMATE SUMMARY

Climate Analysis Center, NMC  
National Weather Service, NOAA

UPDATE ON THE ABNORMALLY DRY AND WARM CONDITIONS ACROSS THE  
NORTHERN GREAT PLAINS, MIDWEST, AND SOUTHEAST SINCE APRIL 1.

Conditions have continued to deteriorate throughout much of the northern Great Plains, Midwest, and South this past week as unseasonably warm weather in the northern half of the U.S. exacerbated the region's abnormal dryness. Some temporary relief came to portions of the Dakotas and Carolinas in the form of scattered thunderstorms that dropped from one to three inches of rain, however, many other locations failed to measure any weekly precipitation.

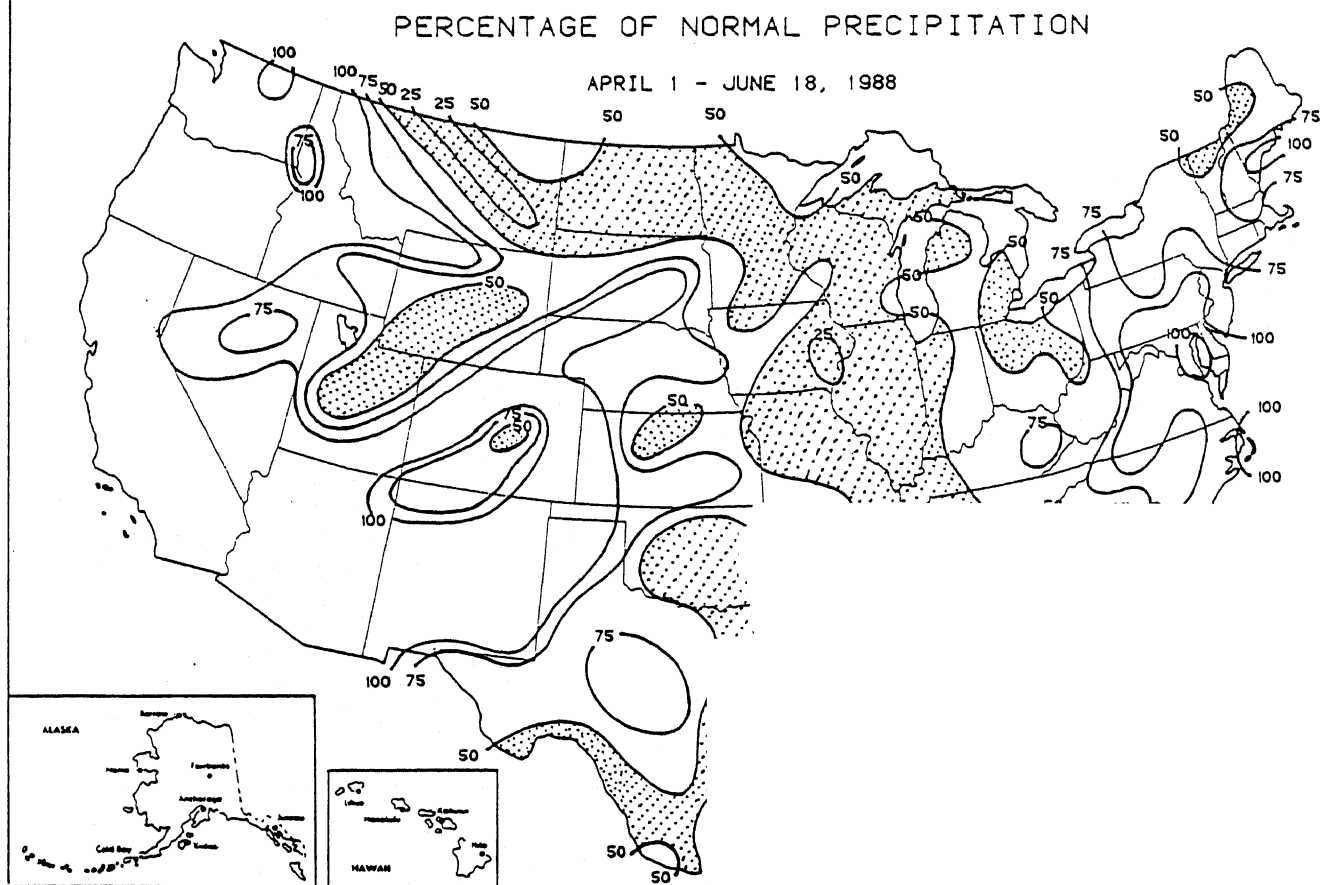


Figure 1. Percentage of normal precipitation: central U.S., from the north to the south, has less precipitation since the start of the season than less than 25%.

Since April 1, a large section of the country has received less than half its normal precipitation, with some areas observing under 25% (see Figure 1). The unusual dryness and warmth has come at a critical time of the year because much of the Great Plains and Midwest normally obtain the majority of their annual precipitation during the spring and summer months. Late Spring marks the start of the growing season in the wheat, corn, and soybean producing regions of the central U.S. as the crops depend upon timely and adequate rainfall and favorable temperatures. Unfortunately, the lack of normal precipitation over the past 2 1/2 months has accumulated deficits exceeding six inches in most of the Mississippi Valley (see Figure 2). Greatest departures below normal were located in eastern Iowa (-8.6 in), the Florida panhandle (-10.0 in), northern Louisiana (-10.8 in), and eastern Texas (-11.0 in).

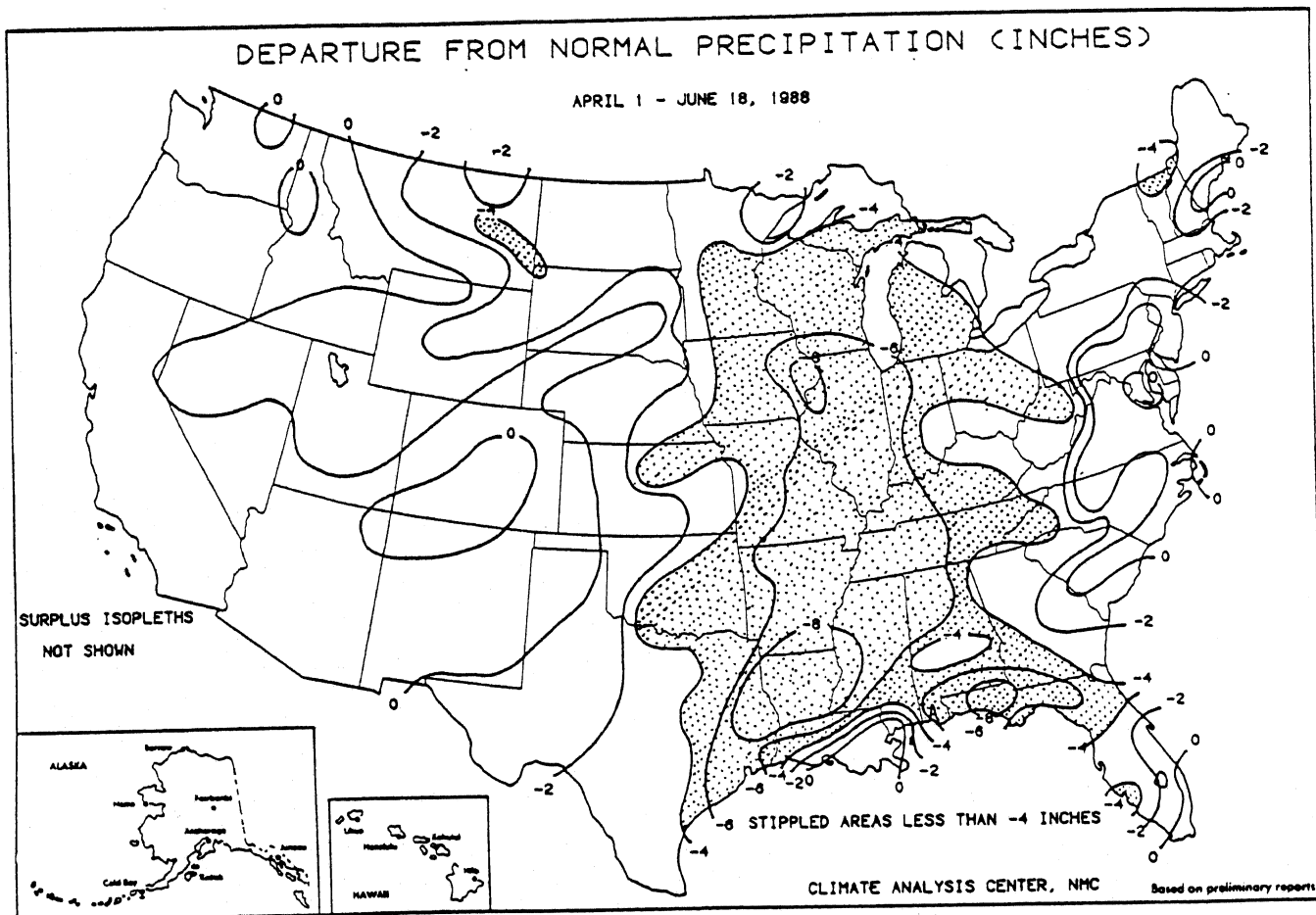


Figure 2. Departure from normal precipitation (inches) from April 1-June 18, 1988. Only the zero and negative isopleth departures are drawn. Much of the Mississippi Valley has accumulated deficiencies of greater than 6 inches over the past 2 1/2 months. Departures up to -11 inches existed in parts of eastern Texas, northern Louisiana, and the panhandle of Florida.

Table 1 displays April, May, and the first eighteen days of June precipitation and temperature information for selected cities in the afflicted regions. Most notable is the dramatic decrease in rainfall as compared to normal since April, and the general increase in above normal temperatures, especially in the northern half of the nation. This is further demonstrated by the front cover which shows that a significant portion of the country has observed less than 75% of its normal precipitation and has had above normal temperatures. Since April 1, the northern Great Plains and upper Midwest have experienced much above normal temperatures with departures of up to +8°F in North Dakota (see Figure 3). The lower Midwest and Southeast have observed below normal temperatures which have helped to reduce the evaporative demand, but normal temperatures will approach 80°F by July and August. In addition, record-breaking heat waves have recently afflicted the northern Great Plains, Midwest, and New England regions (see this week's U.S. Weekly Weather Highlights) as highs in the upper nineties and lower one hundreds have been frequent in June.

Table 1. Selected cities monthly precipitation and temperature information for April, May, and June, 1988.

Station	April 1-30				May 1-31				June 1-18			
	Precip(In)		Temps(F)		Precip(In)		Temps(F)		Precip(In)		Temps(F)	
	Obs	Nml	Obs	Nml	Obs	Nml	Obs	Nml	Obs	Nml	Obs	Nml
Chicago/ O'Hare, IL	2.08	3.85	48	49	1.19	3.13	61	59	0.00	2.57	70	67
Waterloo, Iowa	1.72	3.54	48	47	1.61	4.13	65	59	0.13	2.53	71	68
Bismarck, N. Dakota	0.12	1.49	45	42	1.11	2.21	61	55	0.37	1.83	74	63
Wausau, Wisconsin	1.72	2.86	44	43	1.52	3.77	60	55	0.60	2.34	68	63
Memphis, Tennessee	2.85	5.75	63	63	2.38	5.04	72	71	0.20	2.17	77	78
Monroe, Louisiana	0.61	4.95	66	65	0.29	5.04	73	73	0.23	1.96	77	79
Tallahassee Florida	3.77	4.11	66	67	0.51	5.14	70	74	0.91	3.69	75	79

April, 1988 was extremely dry in the northern Great Plains, while dryness began to extended southward into the Midwest and South. By May, above normal temperatures combined with below normal precipitation in the northern Great Plains and upper Midwest while the Southeast remained relatively cool. So far in June, very dry weather has afflicted all three regions as warm conditions have spread southward and eastward from the north-central U.S. into the Midwest and New England regions.

According to several press reports, the dryness has shrunk the Ohio and Mississippi Rivers to record low levels and has stranded hundreds of barges. In the Midwest and Great Plains, great concern over the nation's corn, soybean, and wheat crops has been the center of media attention as the dryness and heat have adversely affected the seedlings and further depleted the soil moisture reserves. Until the large blocking ridge of high pressure located over the central U.S. weakens and/or moves, the outlook for substantial rainfall in the center of the nation appears unfavorable.

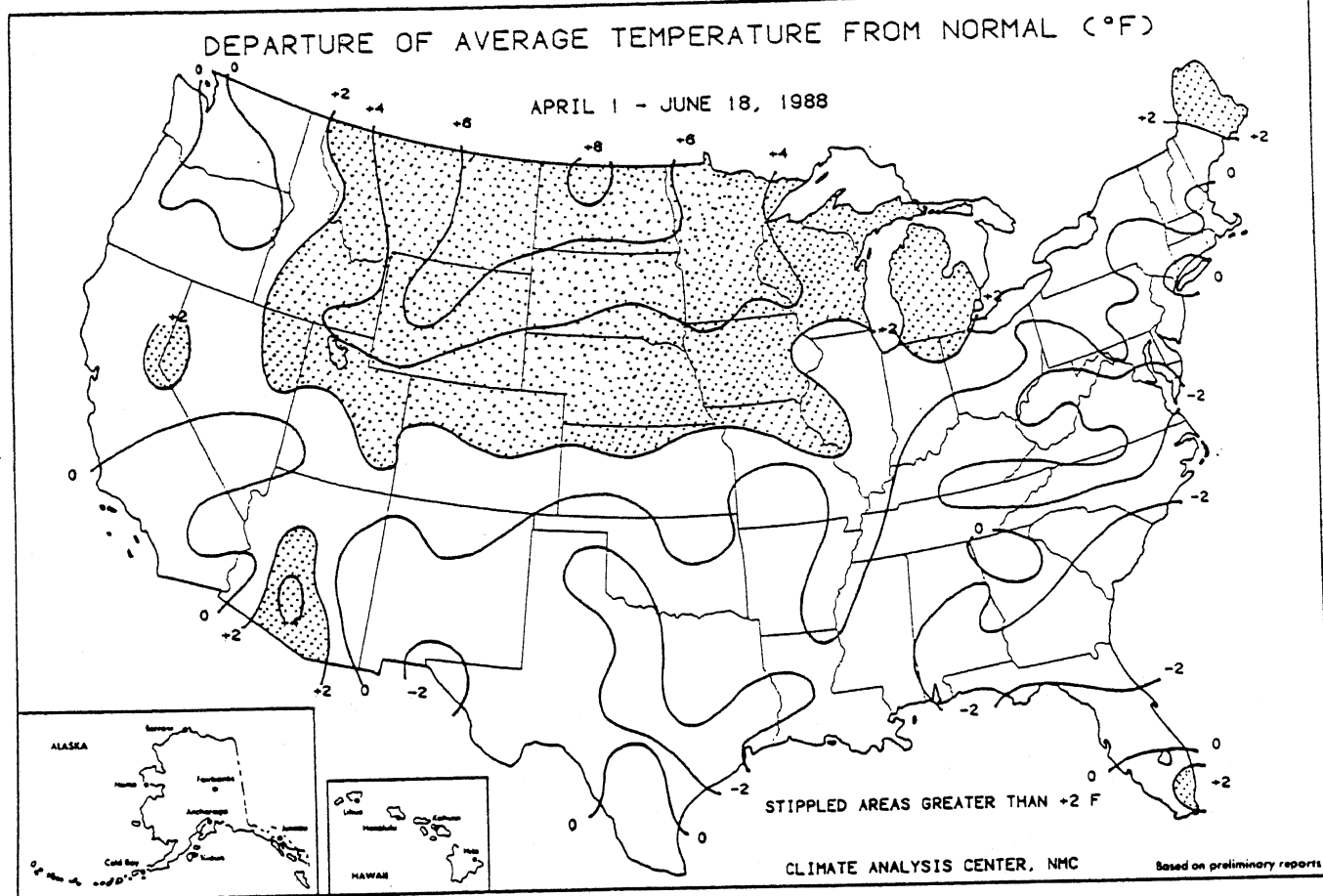
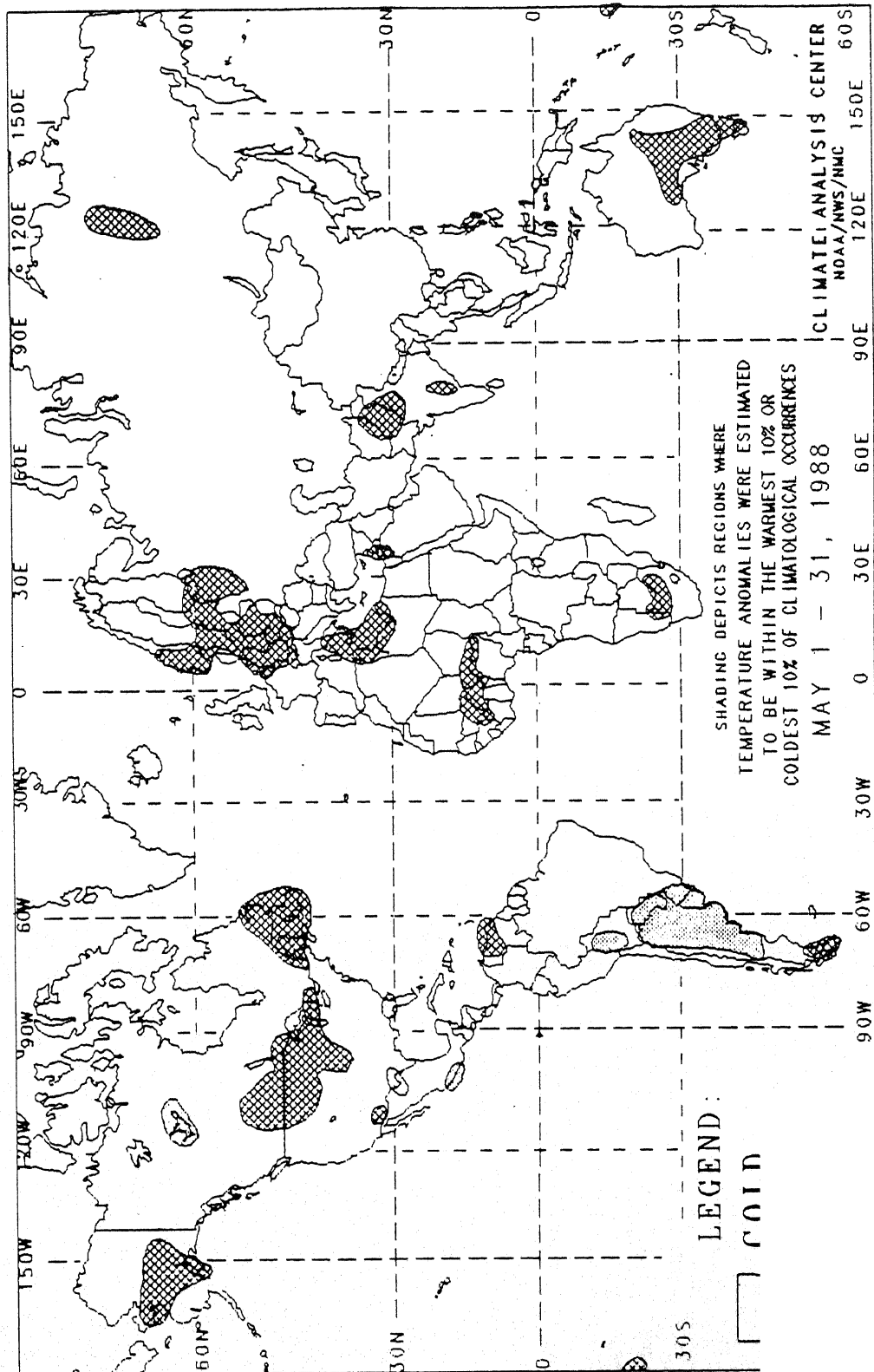


Figure 3. Departure of average temperature from normal (°F) during 4/1-6/18/88. In addition to the unseasonably dry conditions in the eastern two-thirds of the U.S. since 4/1/88, abnormally warm weather in the northern Great Plains has further aggravated the region's soil moisture conditions.

# GLOBAL TEMPERATURE ANOMALIES

Monthly



based on approximately 2500  
at 26 days of temperature  
reports. Many stations do not  
ny night time observations are  
ng observations the estimated  
as. This in turn may have  
at of some warm anomalies

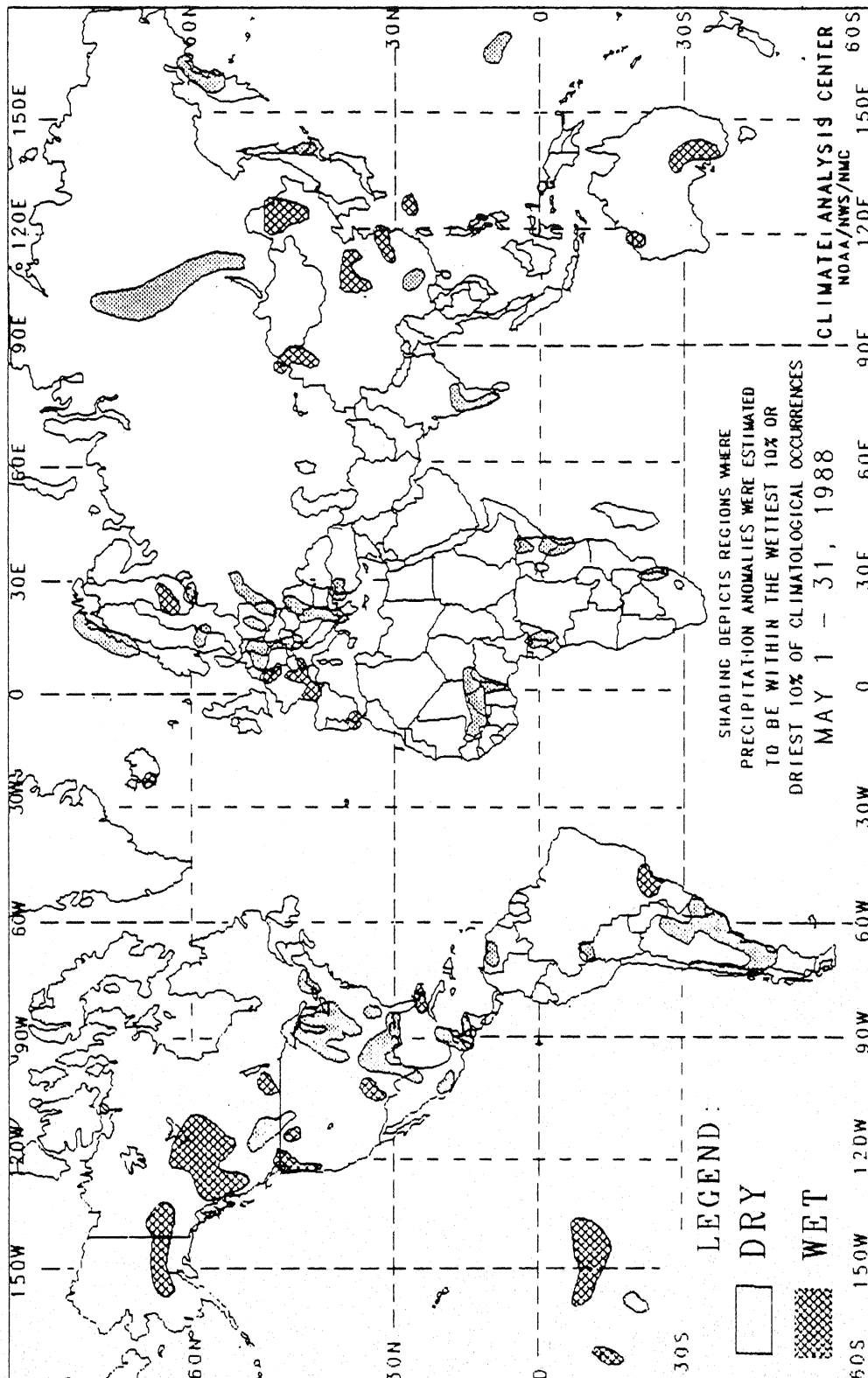
In some regions, insufficient data exist to determine the magnitude  
of anomalies. These regions are located in parts of tropical Africa,  
southwestern Asia, interior equatorial South America, and along the  
Arctic Coast. Either current data are too sparse or incomplete for  
analysis, or historical data are insufficient for determining  
percentiles, or both. No attempt has been made to estimate the  
magnitude of anomalies in such regions

PRINCIPAL TEMPERATURE ANOMALIES - MAY 1988

REGIONS AFFECTED	TEMPERATURE AVERAGE (C)	DEPARTURE FROM NORMAL (C)	COMMENTS
ALASKA	+6 TO +12	+2 TO +4	VERY MILD EARLY IN MAY
GREAT SLAVE LAKE, CANADA	-4 TO +2	-3 TO -6	COLD - 6 TO 9 WEEKS
NORTH CENTRAL UNITED STATES AND SOUTH CENTRAL CANADA	+11 TO +20	+2 TO +5	VERY WARM SECOND HALF OF MAY
SOUTHEASTERN CANADA AND ADJACENT UNITED STATES	+7 TO +13	+2 TO +3	WARM - 6 TO 7 WEEKS
SOUTHERN ARIZONA	+25 TO +27	+2 TO +3	VERY WARM MIDDLE OF MAY
SOUTH CENTRAL TEXAS AND ADJACENT MEXICO	+21 TO +22	-2 TO -3	VERY COOL MIDDLE OF MAY
NORTHERN FLORIDA	+21 TO +22	AROUND -2	VERY COOL EARLY AND LATE IN MAY
WEST COAST OF MEXICO	+25 TO +26	-2 TO -3	VERY COOL EARLY AND LATE IN MAY
VENEZUELA	+26 TO +30	AROUND +2	VERY WARM FIRST HALF OF MAY
BOLIVIA	+6 TO +23	-2 TO -3	VERY COOL LATE IN MAY
ARGENTINA, URUGUAY, PARAGUAY, AND BRAZIL	+3 TO +18	-2 TO -6	COLD - 6 TO 8 WEEKS
EXTREME SOUTHERN CHILE AND EXTREME SOUTHERN ARGENTINA	+5 TO +6	AROUND +2	VERY MILD FIRST HALF OF MAY
NORTHERN AND CENTRAL EUROPE	-1 TO +16	+2 TO +3	VERY WARM EARLY AND LATE IN MAY
LIBYA, TUNISIA, ALGERIA, MALTA, AND ITALY	+19 TO +31	+2 TO +6	WARM - 2 TO 6 WEEKS
ISRAEL AND JORDAN	+22 TO +30	AROUND +2	VERY WARM MIDDLE OF MAY
SAHEL REGION	+30 TO +36	+2 TO +3	WARM - 4 WEEKS
SOUTH AFRICA AND NAMIBIA	+15 TO +18	AROUND +2	VERY WARM EARLY AND LATE IN MAY
PAKISTAN AND ADJACENT PARTS OF AFGHANISTAN AND INDIA	+21 TO +37	+2 TO +4	VERY WARM LATE IN MAY
CENTRAL INDIA	+35 TO +37	AROUND +2	VERY WARM LATE IN MAY
CENTRAL SIBERIA	+2 TO +7	+2 TO +3	WARM - 5 WEEKS
AUSTRALIA	+11 TO +20	AROUND +2	VERY WARM EARLY AND LATE IN MAY
FIJI ISLANDS	+26 TO +27	AROUND +2	WARM - 4 WEEKS

# GLOBAL PRECIPITATION ANOMALIES

Monthly



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

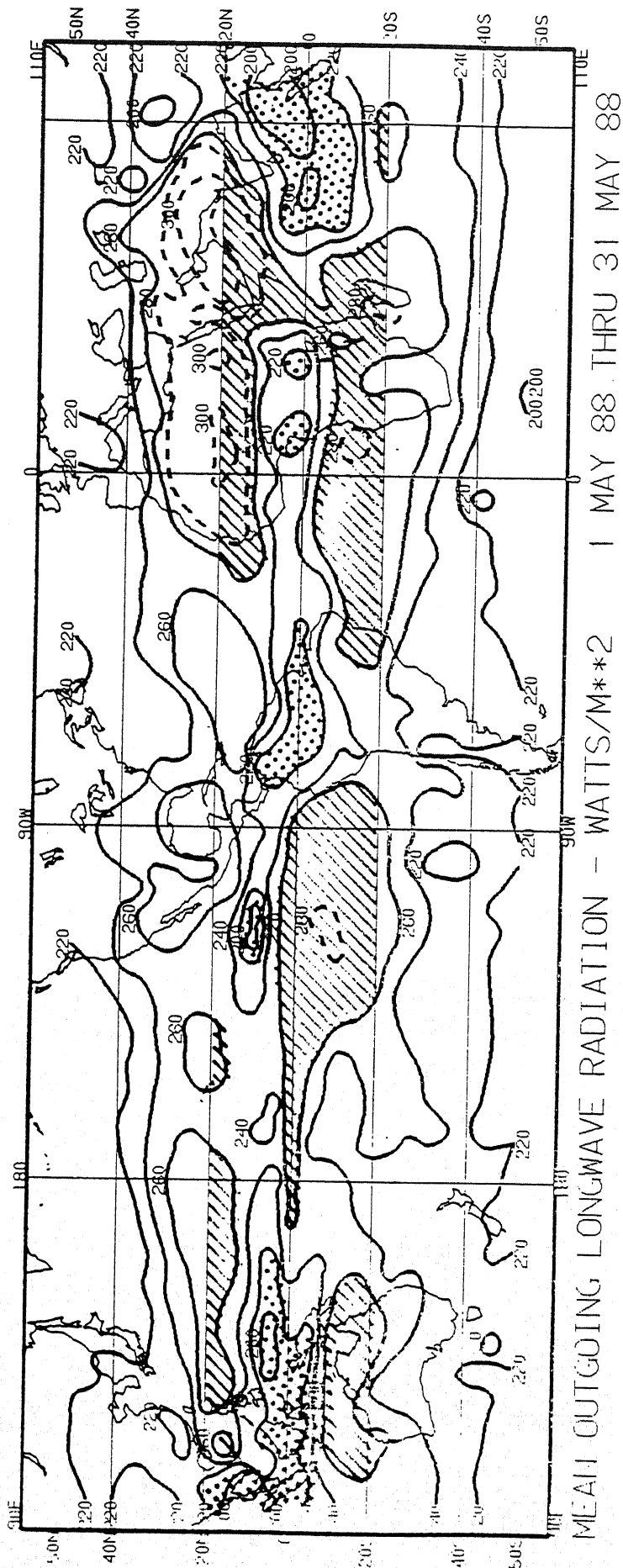
In climatologically arid regions where normal precipitation for the one month period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total one month precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of one month precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

# PRINCIPAL PRECIPITATION ANOMALIES - MAY 1988

REGIONS AFFECTED	PRECIPITATION TOTAL (MM)	PERCENT OF NORMAL	COMMENTS	REGIONS AFFECTED	PRECIPITATION TOTAL (MM)	PERCENT OF NORMAL	COMMENTS
ALASKA AND ADJACENT CANADA	47 TO 78	215 TO 487	WET - 4 TO 8 WEEKS	SOUTHERN SWEDEN	9 TO 18	26 TO 49	DRY - 6 WEEKS
WEST CENTRAL CANADA	58 TO 113	232 TO 367	WET - 6 TO 16 WEEKS	SOUTH CENTRAL FINLAND	68 TO 188	281 TO 282	HEAVY PRECIPITATION LATE IN MAY
NORTHWESTERN UNITED STATES AND ADJACENT CANADA	66 TO 272	166 TO 279	WET - 6 TO 16 WEEKS	SOUTHEASTERN FINLAND	2 TO 7	7 TO 28	DRY - 6 WEEKS
WESTERN MONTANA	71 TO 79	162 TO 196	HEAVY PRECIPITATION EARLY IN MAY	CENTRAL POLAND	6 TO 31	11 TO 46	DRY - 9 TO 12 WEEKS
SOUTH CENTRAL CANADA AND ADJACENT UNITED STATES	4 TO 23	18 TO 48	DRY - 26 TO 28 WEEKS	EASTERN POLAND AND WESTERN U.S.A.	16 TO 33	31 TO 68	DRY - 7 TO 18 WEEKS
SOUTHERN MANITOBA AND SOUTHERN SASKATCHEWAN	182 TO 119	232 TO 422	WET - 6 TO 7 WEEKS	ROMANIA, BULGARIA, AND YUGOSLAVIA	1 TO 78	1 TO 68	DRY - 6 TO 18 WEEKS
NORTH CENTRAL UNITED STATES AND ADJACENT CANADA	2 TO 84	2 TO 61	DRY - 5 TO 26 WEEKS	NORTHWESTERN TURKEY	1 TO 27	3 TO 68	DRY - 6 TO 7 WEEKS
SOUTHERN QUEBEC AND SOUTHEASTERN ONTARIO	26 TO 36	32 TO 48	DRY - 6 WEEKS	SOUTHERN PORTUGAL AND SOUTHWESTERN SPAIN	66 TO 122	281 TO 346	WET - 6 TO 6 WEEKS
NORTHWESTERN TEXAS AND SOUTHEASTERN NEW MEXICO	76 TO 163	282 TO 482	WET - 4 TO 8 WEEKS	SOUTHERN FRANCE	113 TO 193	162 TO 282	WET - 6 TO 7 WEEKS
SOUTH CENTRAL UNITED STATES AND ADJACENT MEXICO	8 TO 43	8 TO 39	DRY - 5 TO 22 WEEKS	SAHEL REGION	8 TO 62	8 TO 48	DRY - 6 TO 7 WEEKS
SOUTHEASTERN UNITED STATES	18 TO 61	9 TO 43	DRY - 6 TO 19 WEEKS	GABON AND CONGO	23 TO 185	21 TO 61	DRY - 4 WEEKS
FLORIDA AND THE BAHAMAS	161 TO 278	231 TO 246	WET - 7 WEEKS	NORTH CENTRAL KENYA	12 TO 26	12 TO 44	DRY - 6 WEEKS
CENTRAL MEXICO	8 TO 32	8 TO 37	DRY - 7 TO 12 WEEKS	SOUTHERN KENYA AND NORTHEASTERN TANZANIA	6 TO 146	7 TO 38	DRY - 4 TO 8 WEEKS
EXTREME SOUTHERN MEXICO	8 TO 67	8 TO 48	DRY - 8 TO 26 WEEKS	NORTHEASTERN SOUTH AFRICA AND SOUTHERN MOZAMBIQUE	8 TO 48	8 TO 39	DRY - 4 TO 7 WEEKS
HONDURAS	4 TO 71	4 TO 47	DRY - 7 TO 21 WEEKS	SOUTHWESTERN INDIA	8 TO 183	8 TO 48	DRY - 7 TO 26 WEEKS
SAMOA AND TONGA	384 TO 365	217 TO 223	WET - 6 WEEKS	CENTRAL SIBERIA	4 TO 13	19 TO 48	DRY - 6 TO 18 WEEKS
FRENCH POLYNESIA	196 TO 481	229 TO 483	WET - 6 TO 12 WEEKS	NORTHWESTERN CHINA	58 TO 77	265 TO 1888	WET - 4 TO 6 WEEKS
COOK ISLANDS	21 TO 79	12 TO 48	DRY - 5 TO 6 WEEKS	NORTHEASTERN CHINA	58 TO 118	183 TO 373	WET - 6 TO 7 WEEKS
NORTHWESTERN VENEZUELA	8 TO 38	8 TO 41	DRY - 22 WEEKS	EASTERN SIBERIA	4 TO 18	9 TO 43	DRY - 11 TO 26 WEEKS
NORTHERN BOLIVIA	18 TO 14	13 TO 26	DRY - 7 TO 12 WEEKS	HOKKAIDO, JAPAN	38 TO 67	48 TO 46	DRY - 4 TO 6 WEEKS
VICINITY OF SAO PAULO, BRAZIL	211 TO 364	224 TO 348	HEAVY PRECIPITATION EARLY AND LATE IN MAY	NORTH CENTRAL CHINA	64 TO 122	224 TO 393	WET - 6 TO 7 WEEKS
ARGENTINA, CHILE, AND URUGUAY	8 TO 117	8 TO 46	DRY - 5 TO 18 WEEKS	EAST CENTRAL CHINA	79 TO 292	177 TO 229	WET - 6 TO 6 WEEKS
ICELAND	98 TO 121	199 TO 246	WET - 6 WEEKS	SOUTH CENTRAL CHINA	41 TO 164	46 TO 68	DRY - 6 WEEKS
NORTHERN NORWAY	12 TO 28	24 TO 43	DRY - 6 TO 6 WEEKS	RYUKYU ISLANDS	476 TO 623	191 TO 216	WET - 8 WEEKS
BENELUX COUNTRIES	125 TO 198	285 TO 287	HEAVY PRECIPITATION	MARSHALL ISLANDS	82 TO 174	29 TO 66	DRY - 6 WEEKS
GERMANY AND AUSTRIA	4 TO 69	8 TO 49	DRY - 5 TO 12 WEEKS	NORTHEASTERN AUSTRALIA	114 TO 141	368 TO 466	WET - 7 TO 16 WEEKS
				SOUTHEASTERN AUSTRALIA	52 TO 168	227 TO 367	WET - 4 WEEKS

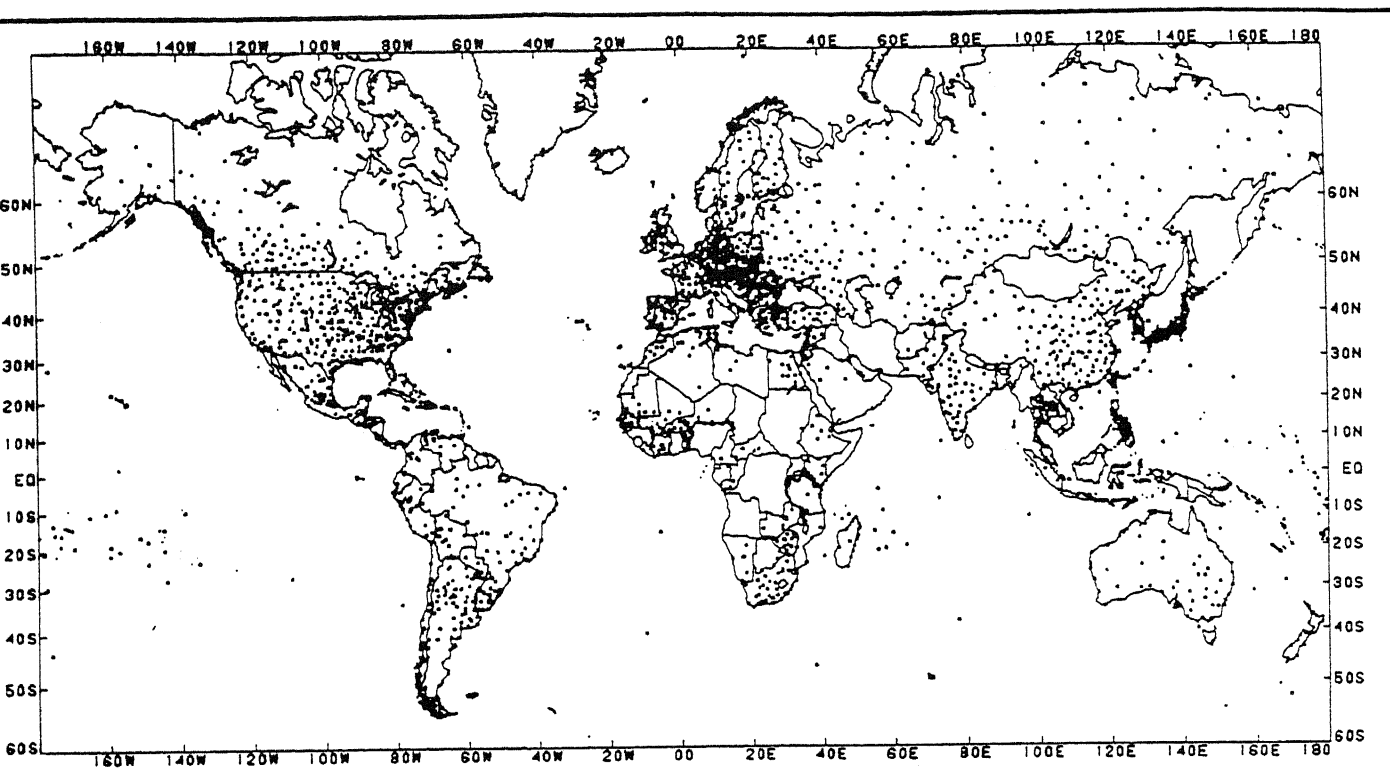


LESS THAN  
220, PRECIPITATION LIKELY

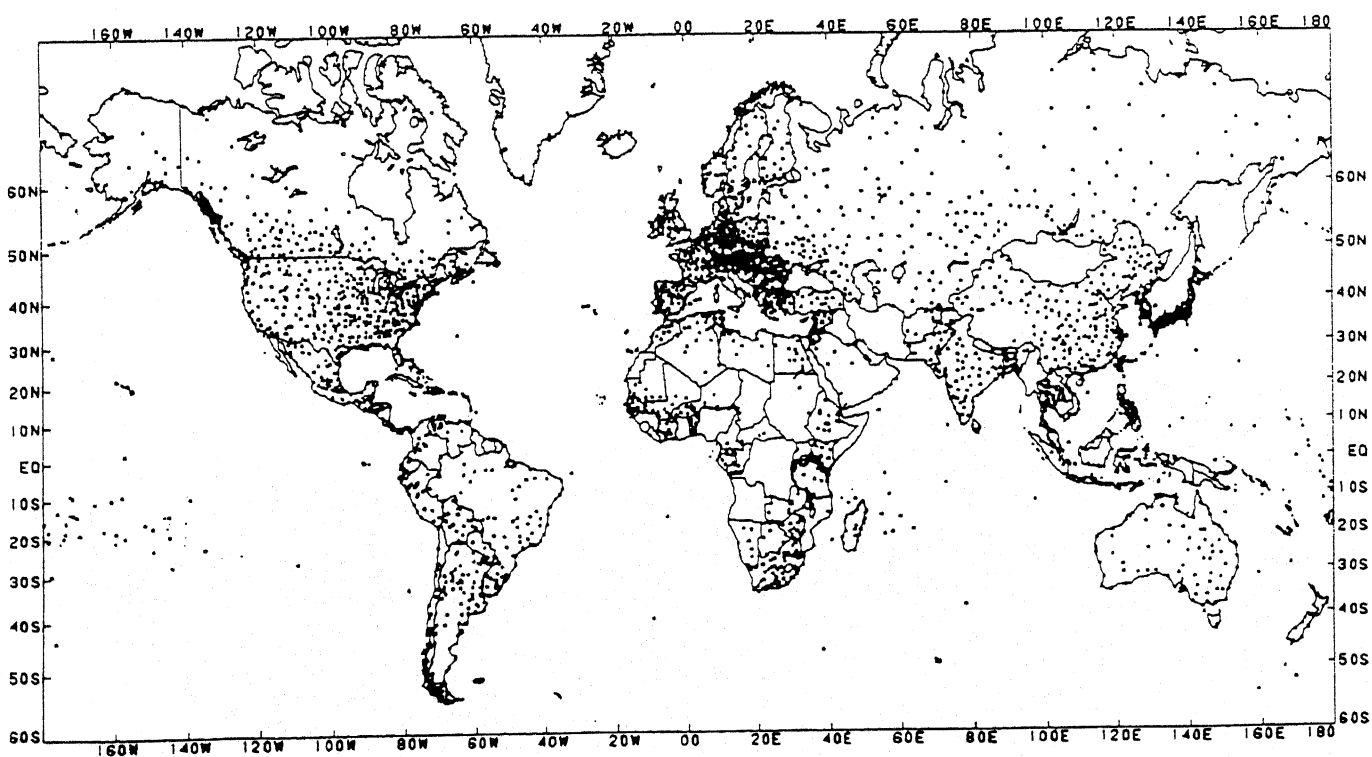
GREATER THAN  
260, PRECIPITATION UNLIKELY

mean monthly value of outgoing long wave radiation (OLR) as measured by polar orbiting satellite. In tropical areas that receive primarily OLR values of less than 220  $\text{watt/m}^2$  is associated with significant rainfall; a value greater than 260  $\text{watt/m}^2$  normally indicates little or no rainfall.

Interpreting this chart at higher latitudes, where much of the rainfall is or in some tropical coastal or island locations, where the relationship is physically induced. The approximate relationship between mean OLR and rainfall is not necessarily hold in such locations.



Stations used for AVERAGE TEMPERATURE anomaly analyses during May, 1988.



Stations used for TOTAL PRECIPITATION anomaly analyses during May, 1988.

